UPDATED: 16 June 2004

HALON SYSTEM CHECK SHEET
FOR USS_____
DATE: _____

REF: (A) PMS 5553/026 (MRC 18M-4R APPLICABLE TO FFG 7 CLASS WARMALD CYLINDERS ONLY)
(B) NSTM 555/079 VOL-II
(C) GSO 555
(D) NAVSEA DWG 5959326 REV A
(E) S6430-AE-TED-010 VOLUME 1 REV 2
(F) NSTM 505
(G) CNSF 230524Z MAY 2003
(H) CNSF 290604Z MAR 2004

	IAW	SAT/ UNSAT	SAT/ UNSAT	SAT/ UNSAT	SAT/ UNSAT	SAT/ UNSAT	SAT/ UNSAT
COMPARTMENT NUMBER							
PRIMARY OR RESERVE							
A. HALON FLEXIBLE DISCHARGE HOSE:							
1. Is there a tag attached that list the date of installation?	**A-2R/TED-010**						
2. Are the hoses in good condition? (note - installation and hydro tag will always remain on the hose) - Paint was on hose (large amounts). - Wire strands were found broken (20 random wires or 10 adjacent wires is criteria for unsat) - Corrosion on hose found to be greater than 1 in squared. - Permanent deformation or bulging was found.	**A-2R/TED-010**						
2. Was the halon discharge piping free of defects? - Piping was rusted and deteriorated. - Halon discharge piping supports were rusted and deteriorated**.** - Halon discharge piping was damaged, cracks evident**.** - Halon discharge nozzles were obstructed**.**	**120M-1R**						
B. HALON CYLINDERS (INSTALLED)							
1. Were securing brackets/ fasteners short studded/loose/missing?							
2. Was bottle pressure IAW PMS (based on temperature of space) and results properly annotated on attached tag? - Pressure annotated on bottle gauge.	**M-1**						
3. Is the halon cylinder weight and date performed properly annotated on the cylinder tags or recorded in a log book? - Tare weight is placed in block (1) found on the cylinder neck. - Weight of Cylinder cap is placed in block (3). (13 pounds approx) - Add the Tare weight and the cylinder cap weight together and place the weight in the bottom block. - On the back of the card fill in the Gross weight of the cylinder with the cap installed. The date weighing the cylinder was completed and initials. - Subtract the total weight (tare weight with cap) on the front of the card from the gross weight in the back of the card to get its net weight or charge weight. - Ensure the serial nr. on the cylinder matches the serial nr. on the card.	**R-1** **REF H**						
4. Are cylinders properly secured in brackets? - Cylinders were not mounted in Grade A shock mount brackets. - Cylinders were rusted; deteriorated in bracket.	**NAVSEA DWG, 60M-3R, S-5**						
5. Were halon discharge heads rusted and deteriorated.	**M-1**						
6. Was there a stamped tare weight, gross weight and net weight of cylinder/halon charge found on bottle?	**R-1** **REF H**						
7. Were halon cylinder foundations rusted and deteriorated?	**60M-3R**						
8. Were halon cylinder caps properly stored for sea or secured?							
9. Was the Halon actuation head the same manufacture? (ANSUL with ANSUL) & (KIDDIE with KIDDIE).							
10. Is Halon cylinder free from damage: - Welds - Bulges - Pits or cuts deeper than 1/16 inch							
11. Is there a weight scale onboard to weigh the Halon cylinders and is it calibrated and in good condition?							
C. CO2 ACTUATOR CYLINDERS:							
1. Are the weight of cylinder and the charge stamped on the valve? - Missing weight and charge stamp.	**S-3**						
2. Is there a cylinder record card attached, listing weight	**S-3**						

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and date? - Is 5 lb CO_2 bottle maintenance checks out of periodicity. - Is 5 lb CO_2 bottles within hydrostatic periodicity (5 years if used, 12 years if never used)?							
3. Are actuation stations identified with the photo luminescent marking “halon actuation”?:							
4. Is operational instructions and system diagram posted?	NAVSEA DWG						
5. Was CO_2 actuating cylinder and associated stowage provided?	S-3						
6. Were securing brackets correctly installed?							
7. Were securing brackets loose/deteriorated?							
8. Was there provision for spare 5 lb CO_2 bottles?							
D. ACTIVATION STATIONS:							
1. Is there at least a primary, reserve and EOS activation stations?	NAVSEA DWG						
2. Are the primary and the reserve activation stations located outside the machinery vestibules?	NAVSEA DWG						
3. Is the filter installed correctly? - Filter was installed backwards. - Filter was clogged. - Filter not installed prior to time delay device. - Time delay filter was incorrectly installed on top of the time delay bottle (where applicable).	18M3R/18M-4R						
4. Did CO_2 actuating piping reveal the presence of rust and moisture indicating the system needs a nitrogen flush?	GSO 555						
5. Are the stations clearly marked (primary/reserve)? - Stations were mislabeled. - Placards and/or warning signs missing.	NAVSEA DWG						
6. Are the pressure switches clearly marked for function? - Pressure switches mislabeled to actual functionality.	NAVSEA DWG						
7. Is the bend radius on the piping correct? - CO_2 actuation pipe bend radius less than 2 inches. - CO_2 coil piping loop was less than 4 inches (loops are for shock loading) - Threaded connections were loose.	NAVSEA DWG						
8. Were warning placards incorrect/not installed?	NAVSEA DWG						
9. Was ¼ check valve correctly installed and free of paint to determine direction of flow?	GSO 555, NSTM 555						
10. Was operational instructions and system diagram posted?	NAVSEA DWG						
11. Was CO_2 vent plug missing? - Vent plug was improperly sized.	NAVSEA DWG						
12. Was CO_2 actuating pipe constructed of carbon steel and subject to internal corrosion, which potentially affected time delays?	NAVSEA DWG						
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E. TIME DELAY DEVICE:							
1. Is the time delay device installed match the time delay required IAW the ship’s DC book and properly engraved? - Machinery space time delay device was not engraved with time delay setting set for 60 seconds. - Gas turbine modules/diesel enclosures/RAST machinery room/towed array room/flammable liquids room/paint mixing and issue room time delay device was not engraved with time delay setting set for 30 seconds.	NAVSEA DWG, DC BOOK						
2. Is the time delay manual bypass valve in the closed position and classified circle X-RAY and numbered? - Valve was not labeled. - Valve was not closed with pin connection and sealed with lead wire seal. - By-pass valve was not painted grey and white. - Manual time delay bypass valve was not installed at the actuation station outside the protected space on the primary system.	NAVSEA DWG, NSTM 505 Table 505-7-1						
F. PRESSURE SWITCHES FOR PRE-DISCHARGE ALARMS, VENTILATION AND HALON FLOW CIRCUIT (MANUAL PULL TEST):							
1. Does the following occur when the primary and reserve pre-discharge pressure switch is manually operated?	U-6, NAVSEA DWG						

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a. Station alarm bell(s) activated? b. All in-space audible alarms/horns activated? c. All in-space and station bell/audible alarm cutout switches operational? d. All in-space visual alarm(s)/beacon(s) activated? Was at least one visual beacon (or its reflection visible from all points in the space? e. "Halon Actuated" indicator energized at station and all remote indicator locations? Note in the remarks section any indicators with 1 of 2 or 2 of 2 indicator bulbs burned out. f. [FFG-7 class Diesel Enclosure Systems Only] Did the SSDG intake flapper shut when tested IAW CNSF 230524ZMAY2003, Para 3.							
2. Does the following occur when the primary and reserve ventilation shutdown pressure switches are manually operated: a. All interlocked supply and exhaust ventilation fans secured? (Verify at controller) Note: Some secondary halon system ventilation systems serving multiple spaces do not secure the ventilation. In this case, the space is isolated using motor operated dampers. (Verify all interlocked ventilation systems in DC book) b. All supply and exhaust dampers fully shut? All damper position indicators (local mechanical and remote) correctly indicate damper position? c. [DDG-51 class only] Did all toxic gas dampers associated with halon protected spaces secure when the pressure switch was activated and automatically open when ventilation pressure switch was reset and supply/exhaust ventilation restored? (See Attachment DDG51_HalonDampers-001, Sheets 1-4 for the location of all toxic gas dampers) e. [DDG-51 Class Flight IIA Only] Were the exhaust vent dampers installed upside down?	**U-6, NAVSEA DWG, DC Book**						
3. Does the following occur when the primary and reserve halon release pressure switch is manually operated: a. "Halon Released" indicator energized at station and at all remote indicator locations. Note in the remarks any indicators with 1 of 2 or 2 of 2 bulbs burned out.	**U-6, NAVSEA DWG**						
4. Are the power available lights operating at all stations? Note in the remarks any indicators with 1 of 2 or 2 of 2 bulbs burned out.	**U-6, NAVSEA DWG**						
5. Do the local/remote indicators meet the following requirements: a. Alarm status panel located outside each escape trunk exit? b. Emergency lighting adequately provided at remote activation stations?	**NAVSEA DWG**						
E. TEST TIME DELAY FOR PROPER OPERATION:	**18M-3R/18M-4R, NAVSEA DWG**						
1. Did all heads fully drop within the time limits of the time delay [Ansul/Kidde heads IAW MRC 18M-3R] or indicate proper manifold pressure [Warmald head IAW MRC 18M-4R] during the time delay demonstration.							
2. [Ansul/Kidde Only] Did any of the heads leak by excessively after they dropped?							
3. [FFG-7 with Warmald heads only] Was the correct calibrated pressure gage and all required line plugs available to perform the time delay demonstration?							
4. Was there any CO2 leakage from the vent plug prior to the time delay activation (indicating leak-by of the bypass valve)? Was the leakage rate sufficient to cause premature halon activation (prior to time delay activation)?							
5. Did all primary and reserve pressure switches (pre-release, vent shutdown and release) activate during the time delay demonstration?							
6. Is the time delay device tested and sat IAW PMS procedures? - Time delay was inop IAW PMS. - Machinery space time delay device was not engraved with time delay setting set for 60 seconds. - Gas turbine modules/diesel enclosures/RAST machinery room/towed array	**18M3-R/18M-4R, NAVSEA DWG**						

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PRIMARY OR RESERVE							
room/flammable liquids room/paint mixing and issue room time delay device was not engraved with time delay setting set for 30 seconds.							

F. SPARE CYLINDERS		**( ) of ( ) were unsat**
1. Were securing brackets/ fasteners short studded/loose/missing?		
2. Was bottle pressure IAW PMS (based on temperature of space)? - Pressure annotated on bottle gauge.	**M-1**	
3. Is the halon cylinder weight and date performed properly annotated on the cylinder tags or recorded in a log book? - Tare weight is placed in block (1) found on the cylinder neck. - Weight of Cylinder cap is placed in block (3). (13 pounds approx) - Add the Tare weight and the cylinder cap weight together and place the weight in the bottom block. - On the back of the card fill in the Gross weight of the cylinder with the cap installed. The date weighing the cylinder was completed and initials. - Subtract the total weight (tare weight with cap) on the front of the card from the gross weight in the back of the card to get its net weight or charge weight. - Ensure the serial nr. on the cylinder matches the serial nr. on the card.	**R-1** **REF H**	
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REMARKS:

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ASSESSOR(S):_____ _____

DATE: _____